R&D PROJECT

Participating companies

- COMSA
- Áridos y Canteras del Norte, S.A.
- KOMAT, S.L.
- MECANIZADOS ASUA, S.L.

Business area

Área Infraestructuras
COMSA, S.A.

DURATION
2022-2024

TOTAL BUDGET
2.092.079€

COMSA BUDGET
740.072 €

KEYWORDS
Ecodesigns-Bridges-Walkways-3D-Cement-Modules

COORDINATOR
José López Sánchez

Title of the project

Eco-design of Modular Footbridges and Bridges with extended durability, dismountable, light, self-repairing and with low maintenance through Advanced Manufacturing

Acronym

PASAMOD

Content of the project

PASAMOD is a novel proposal that aims to develop a self-healing cement-based material for 3D printing. Connection solutions between structural modules will be proposed, compatible with reinforcement strategies, adapted to the specific problem of removable printed modular bridges, which guarantee extended durability and, therefore, an improvement in their economic, environmental and social impact. In addition, elements of great geometric complexity, highly attractive, personalized and adapted to their environment will be addressed.

General objectives

The main objective of PASAMOD is to investigate new solutions for small (<40m), mortar/concrete, modular, lightweight (40-60% less material), highly customized and with greater durability (>30%) against aggressive environments footbridges and bridges, reducing maintenance costs (<50%) and allowing easy assembly and disassembly of damaged modules for repair and/or replacement, as well as for recycling after the end of their service life.

Work packages

Activity 1: Research on self-healing cement-based materials for 3D printing
Activity 2: Research on systems for 3D printing of self-healing materials
Activity 3: Research in modular and dematerialized design of printed footbridges and bridges
Activity 4: Research in 3D printing for the manufacture of modular bridges and footbridges
Activity 5: Feasibility analysis and competitive advantage
Activity 6: Project Management and dissemination

Results and conclusions

Project in execution

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